Service Manual

Model #: VIZIO P50HDM

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-TOP Confidential -

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FCC INFORMATION
This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING
To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

CE CERTIFICATION
This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION
Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

Chapter 1 Features

- Wall-mountable
- New WIDE HD Plasma Panel:1366 x 768 (H x V)
- TruSurround XT sound system and DCDi by Faroujia video image
- High definition digital interface – HDMI
- HDCP supportive
- Multiple-screen display (picture-on-picture/picture-in-picture)
- Selectable picture mode
- 4-language On Screen Display
- 2 S-video and Composite video inputs
- 2 Component video inputs
- 2 HDMI inputs
- 6 audio stereos, 1 PC Mini-Jack
- Supporting DVI converted to HDMI
- Closed caption
- Gloss front bezel
- The thinnest model of this size: 99 mm

Chapter 2 Specification

1. OPTICAL CHARACTERISTICS

Item	Specification
Display Pixels	1366 (H) x 768 (V) pixels
Pixel Pitch	0.810 mm (H) X 0.810mm (V)
Pixel Type	Non-stripe
Color Depth	1,024 (R) x 1,024 (G) x 1,024 (B) colors
Active Display Area	1106.5 mm (H) x 622.1 mm(V)
Brightness (panel spec)	1000 cd/m2 (Typical)
(w/glass filter)	Min.300 cd/m
Contrast ratio (panel spec)	8000:1 (Typical, dark room)
Color Coordinates (typical)	
White (Panel spec)	x=0.300±0.02, y=0.300±0.02
White (w/glass filter)	Warm (5400K)
	Standard (6500K)
	Cool (9300K):

2. INPUT SOURCE

RGB Signal： H: support to 30-80KHz
V: support to 60-85Hz
Pixel Clock: support to 108MHz

HDMI Signal： H: 15.734KHz V: 60Hz (480i)
H: 31KHz V: 60Hz (480p)
H: 45KHz V: 60Hz (720p)
H: 33KHz V: 60Hz (1080i)

S-Video： Video (Y): Analog 0.1Vp-p/75Ω
Video (C): Analog 0.286p-p/75Ω

Composite Video signal: H: 15.734KHz V: 60Hz (NTSC)

Component signal: YPbPr/YCbCr

H: 15.734KHz V: 60Hz (NTSC-480i)

H: 31KHz V: 60Hz(NTSC-480p)

H: 45KHz V: 60Hz(NTSC-720p)

H: 33KHz V: 60Hz(NTSC-1080i)

3. INPUT CONNECTORS

Input Label	Connector Type	Input Label	Connector Type
SERVICE	RJ-11 x 1	ANALOG HD1	YPb/Cb Pr/Cr RCA Jack x 3 Audio RCA Jack x 2
DIGITAL HD1	19 pin HDMI x 1 Audio RCA Jack x 2	ANALOG HD2	YPb/Cb Pr/Cr RCA Jackx 3 Audio RCA Jack x 2
DIGITAL HD2	19 pin HDMI x 1 Audio RCA Jack x 2	AV1	RCA Jack (CVBS) x 3 S-video 4 pin mini DIN x 1
RGB	D-sub 15 pin x 1 Mini Jack x 1 (Audio input)	AV2	RCA Jack (CVBS) x 3 S-video 4 pin mini DIN x 1

4. OUTPUT CONNECTORS

a. Audio RCA Jack x 2

b. 3.5mm Mini-jack earphone x 1

5. POWER SUPPLY

Consumption: 550W MAXPower OFF: less than 3W

6. SPEAKER

Output 8Ω/10W (max) X2

7. ENVIRONMENT

Operating

a. Temperature: 0~40℃
b. Relative humidity: 20%~80% RH
c. Altitude: 0~6,560 ft

Non-operating

a. Temperature: -20~60℃
b. Relative humidity: 10%~90% RH
c. Altitude: 0~9,840 ft

8. DIMENSIONS

a. Height: 871 mm
b. Width: 1241mm
c. Depth: 310 mm (with standard), 99 mm (without standard)

9. WEIGHT

a. Net: 55.2 +/- 0.5 kgs
b. Gross: 65.2 +/- 0.5 kgs

Chapter 3 On Screen Display

Main unit button

POWER

MENU

▲

▼

VOL-/◀

VOL+/▶

INPUT

OSD Adjustment

Mode				
Image Settings				
VIDEO	Picture Mode(User, Vivid, Movie, Game, Sport)			
	Brightness(0~100)			
	Contrast(0~100)			
VIDEO	Saturation(0~100)			
VIDEO	Hue(-50~50)			
VIDEO	Sharpness(0~24)			
	Advanced			
VIDEO		Noise Reduction		
VIDEO			Motion(0~16)	
VIDEO			Digital(0~64)	
VIDEO		Fleshtone	Off, High, Moderate, Low	
VIDEO		Dynamic Contrast (0, 1, 2, 3)		
PC		Auto Adjustment		
PC		Image Position		
PC		Phase		
PC		Clocks / Line		
PC		Color Temp		
PC			Warm(5400K)	

PC			Standard(6500K)	
PC			Cool(9300K)	
PC			User	
PC				Red(0~100)
PC				Green(0~100)
PC				Blue(0~100)
Display Settings				
VIDEO	Aspect Ratio	Wide, Normal, Zoom, Panoramic*		
PC	Aspect Ratio	Wide, Normal		
	PIP			
		PIP Mode	Off, Large PIP, Small PIP, POP	
		PIP Position	Top-Left, Top-Right, Bottom-Left, Bottom-Right	
		PIP Input**		
Audio Settings				
	Bass(0~20)			
	Treble(0~20)			
	Balance(-10~10)			
	SRS TS XT(Off, On)			
	Auto Volume(On, Off)			
	Speakers(On, Off)			
	Audio Out***	Fixed Volume, Variable Volume		
Parental Controls				
VIDEO	Password			
VIDEO		Settings		
VIDEO			TV Rating	

VIDEO				TV Youth (Unblocked, Blocked)
VIDEO				TV Youth 7 (Unblocked, Blocked)
VIDEO				TV G (Unblocked, Blocked)
VIDEO				TV PG (Unblocked, Blocked)
VIDEO				TV 14 (Unblocked, Blocked)
VIDEO				TV MA (Unblocked, Blocked)
VIDEO				Unblocked
VIDEO			Movie Rating	
VIDEO				Movie G (Unblocked, Blocked)
VIDEO				Movie PG (Unblocked, Blocked)
VIDEO				Movie PG-13 (Unblocked, Blocked)
VIDEO				Movie R (Unblocked, Blocked)
VIDEO				Movie NC-17 (Unblocked, Blocked)
VIDEO				Movie X (Unblocked, Blocked)
VIDEO				Unblocked
			Block Unrated (No, Yes)	

VIDEO		Change Password		
VIDEO			Please enter new password	
VIDEO			Please re-enter new password	
VIDEO		Clear All (No, Yes)		
Setup				
	Closed Caption			
		Display	Off, CC1, CC2, CC3, CC4, TEXT1, TEXT2, TEXT3, TEXT4	
		Captions on mute (On, Off)		
	Language	English, Français, Español, Italiano		
	Factory Reset (Yes, No)			
	Image Cleaner			
	Firmware Version			

* HDMI and Component 720P/1080i inputs do not support Panoramic.

** See below for detailed information regarding the PiP sources.

Main \ Sub	AV1 (S-VIDEO)	AV2 (S-VIDEO)	AV1 (VIDEO)	AV2 (VIDEO)	Analog HD1	Analog HD2	Digital HD1	Digital HD2	RGB
AV1 (S-VIDEO)		x	x	x	x	x	x	x	x
AV2 (S-VIDEO)	x		x	x	x	x	x	x	x
AV1 (VIDEO)	x	x		x	x	x	x	x	x
AV2 (VIDEO)	x	x	x		x	x	x	x	x
Analog HD1	x		x			x	x	x	x
Analog HD2	x		x		x		x	x	x
Digital HD1	x		x		x	x		x	x
Digital HD2	x		x		x	x	x		x
RGB	x		x		x	x	x	x	

Remark：

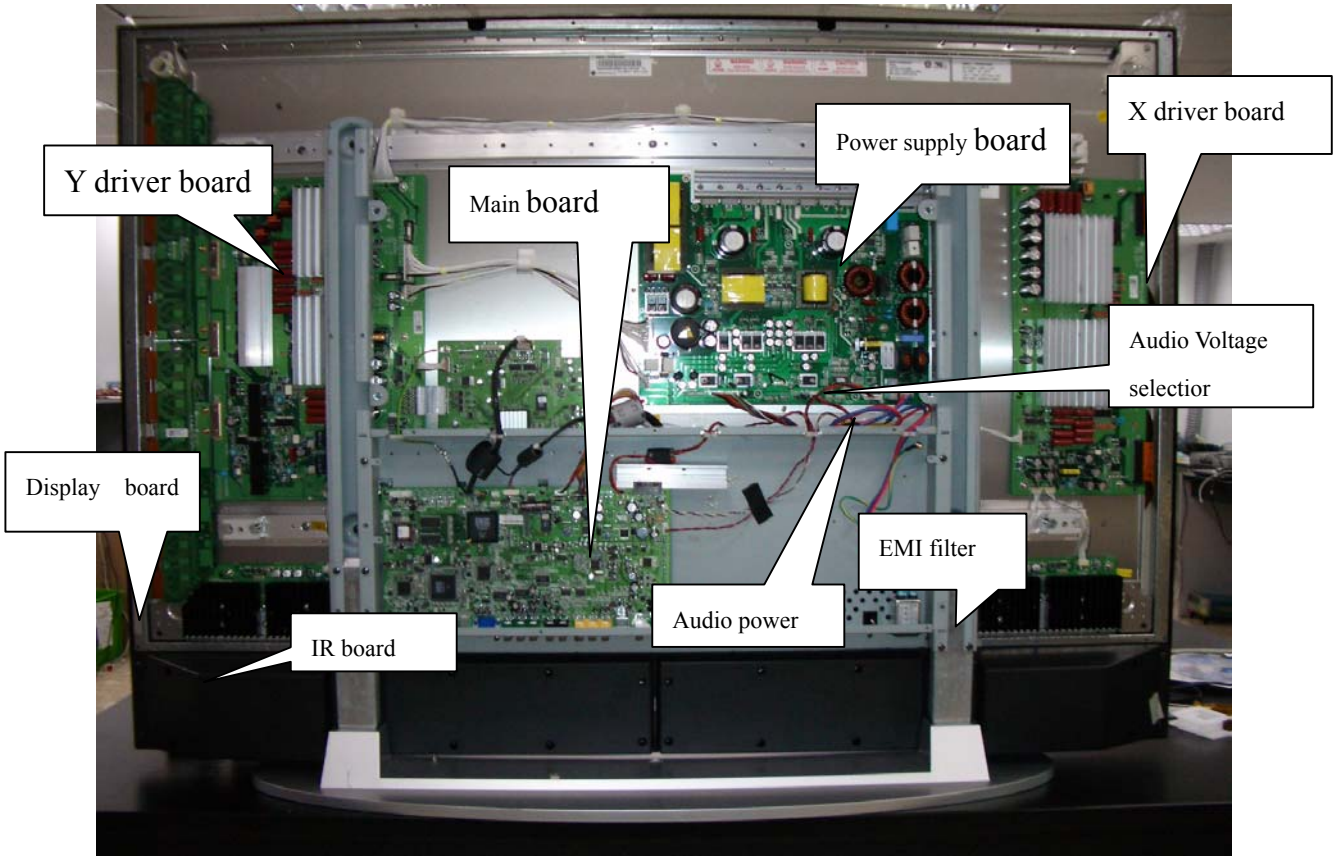
(1)：“x” – Indicates which inputs are available for PIP and POP modes.

(2)：For AV1 and AV2, S-Video has priority. If a signal is connected to AV1 S-Video by itself or signals are connected to AV1 S-Video and AV1 Video simultaneously, then S-Video will be the only choice for AV1. If a signal is connected to AV1 Video only, then Video will be the only choice for AV1. The same input priority scheme applies to AV2.

*** When Speakers off

Chapter 10 PDP Trouble Shooting

A. SYSTEM OVERVIEW

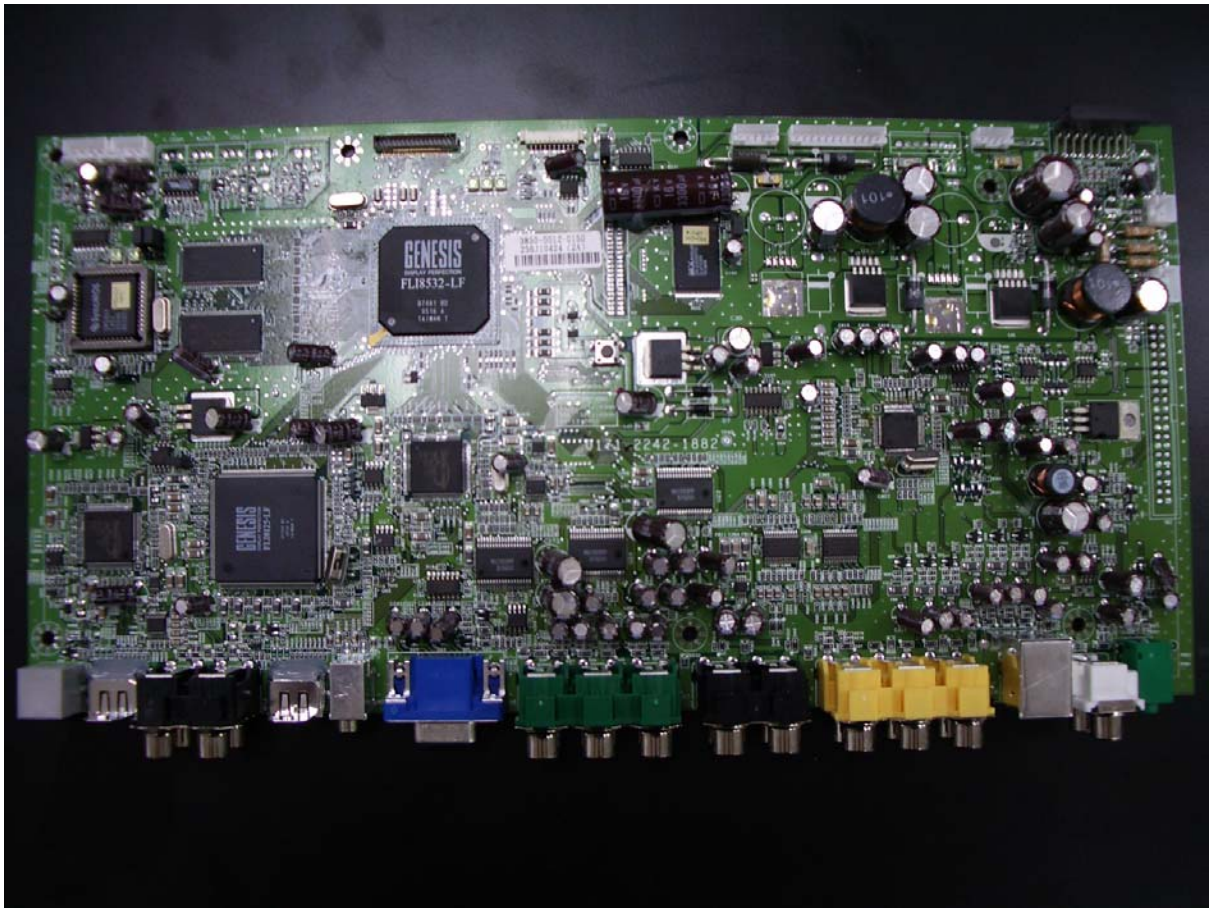


B. PCB PARTS NAME/NUMBER AND FUNCTION DESCRIPTION

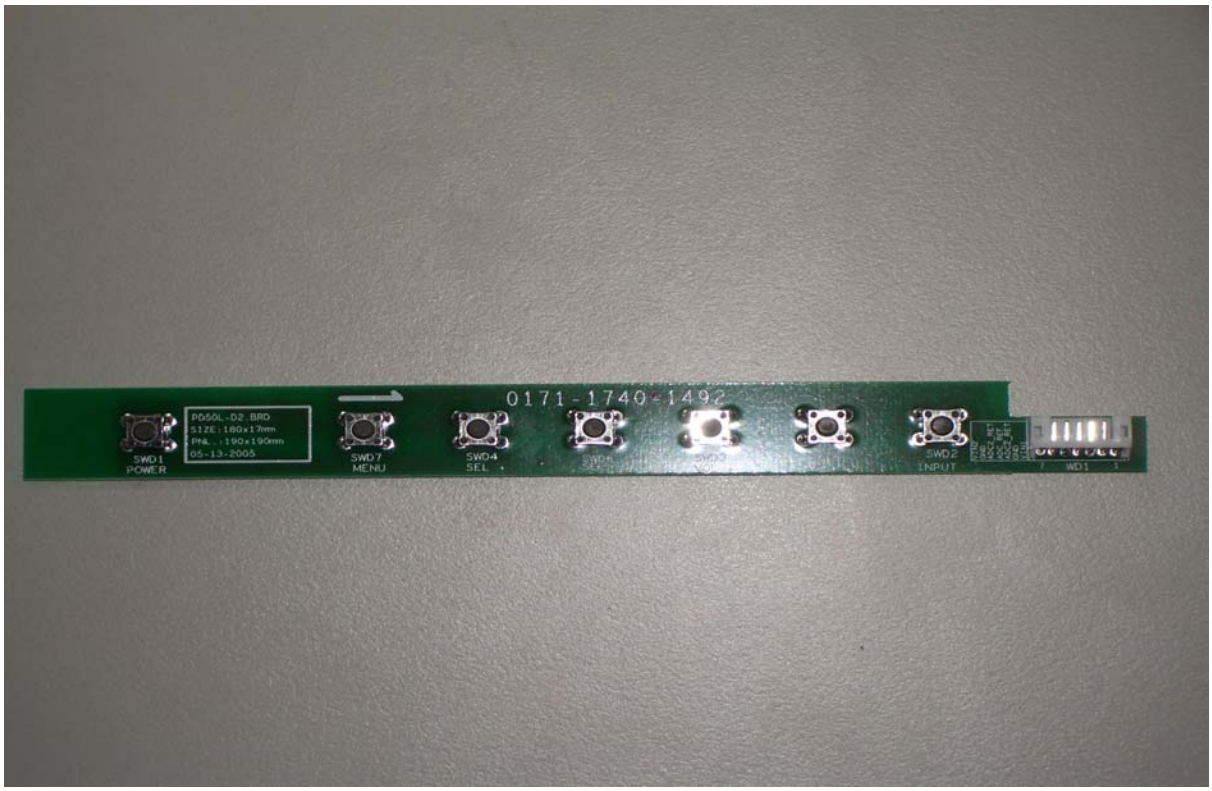
PART NAME	PART NUMBER	FUNCTION DESCRIPTION
POWER SUPPLY BOARD		PROVIDE ALL THE POWER FOR TV SET
X DRIVER BOARD		X ELECTRODE DRIVING BOARD
Y DRIVER BOARD		Y ELECTRODE DRIVING BOARD
AUDIO POWER SELECTOR		AUDIO POWER SUPPLY(+30V OR +24V)
MAIN BOARD	385000120150	CONNECTING TO TRANSFER DISPLY SIGNAL TO PDP SET, AMPLIFIER THE AUDIO SIGNAL TO THE SPEAKER
IR BOARD	385000120189	RECEIVE THE REMOTE CONTROLER AND DISPLAY SYSTEM STATUS LED
DISPLAY BOARD	385000120156	KEYPAD FUNCTION FOR MANUAL OPERATE TV

C. BOARD PICTURE

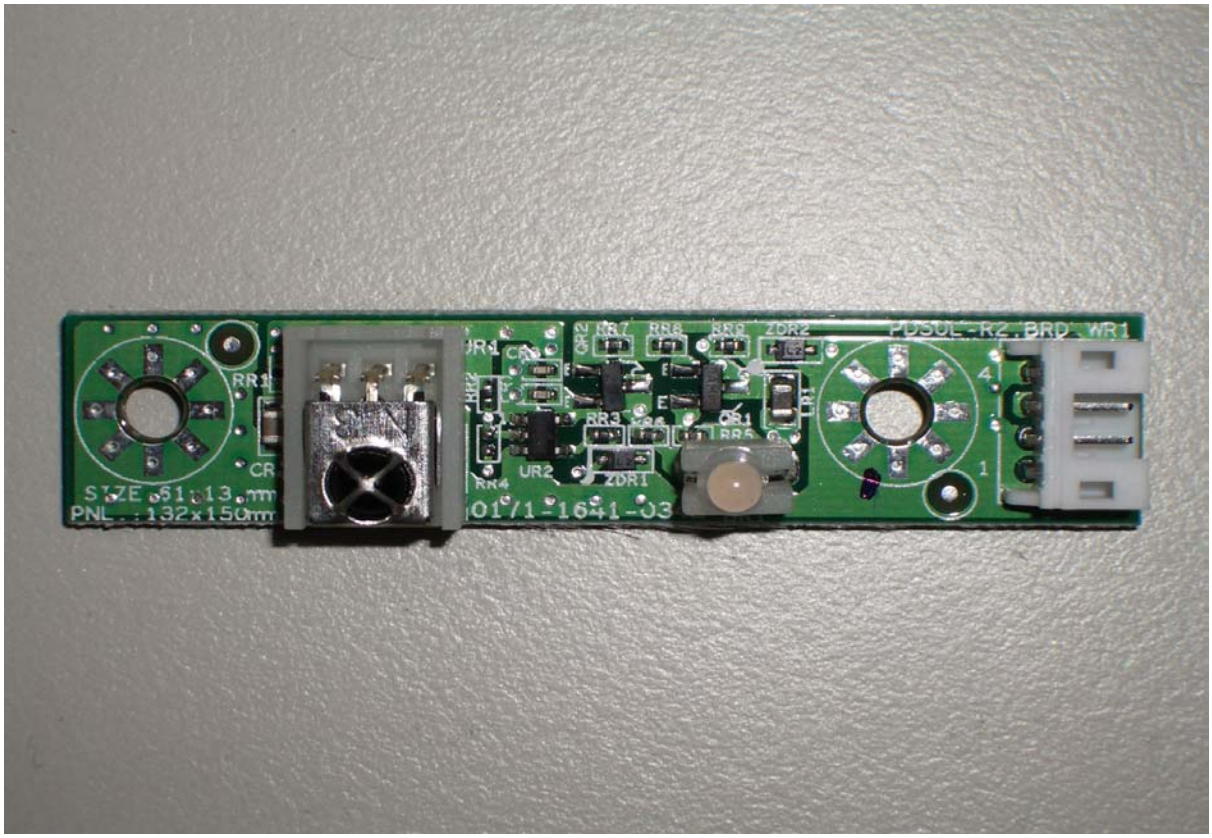
MAIN BOARD



DISPLAY BOARD

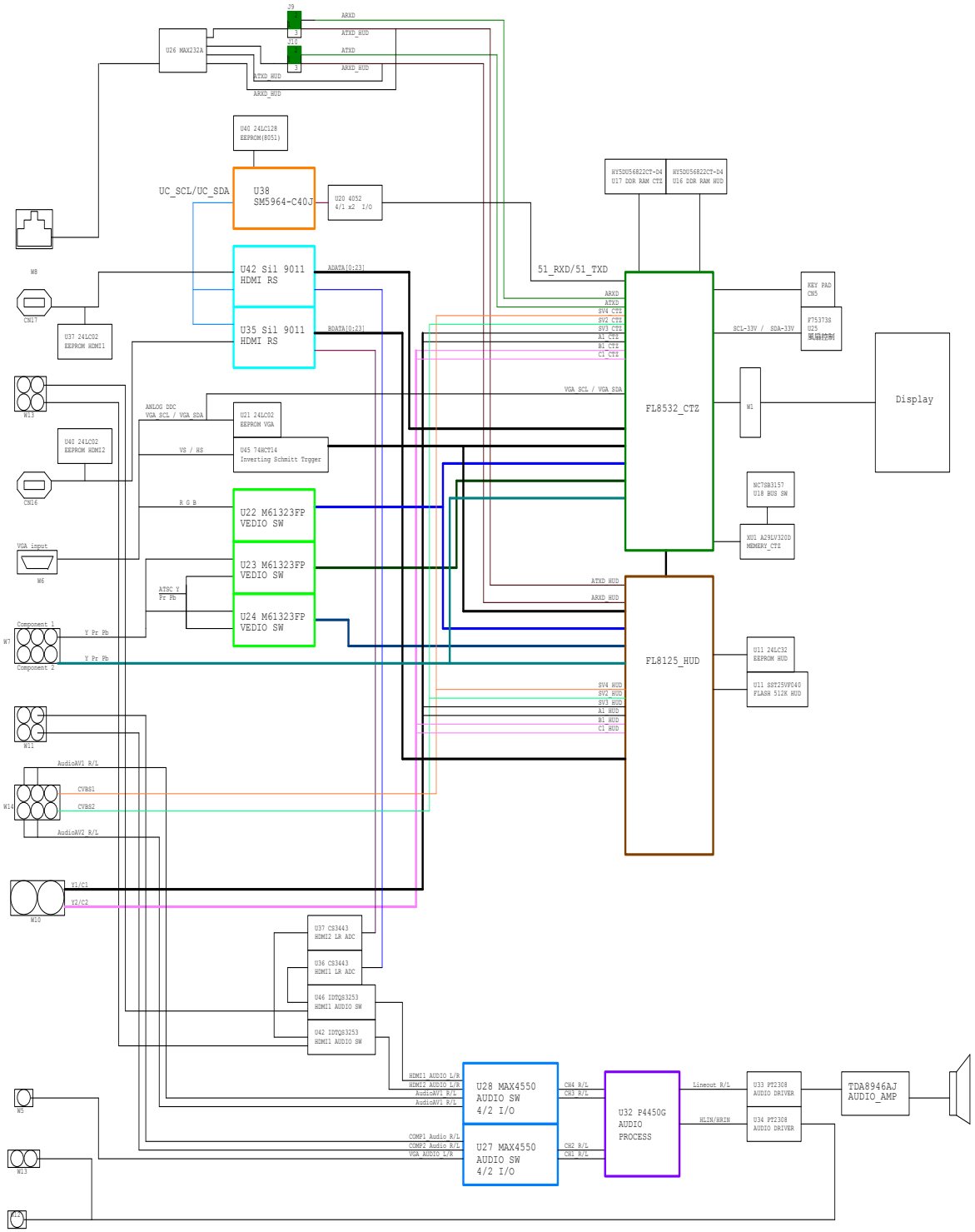


IR BOARD

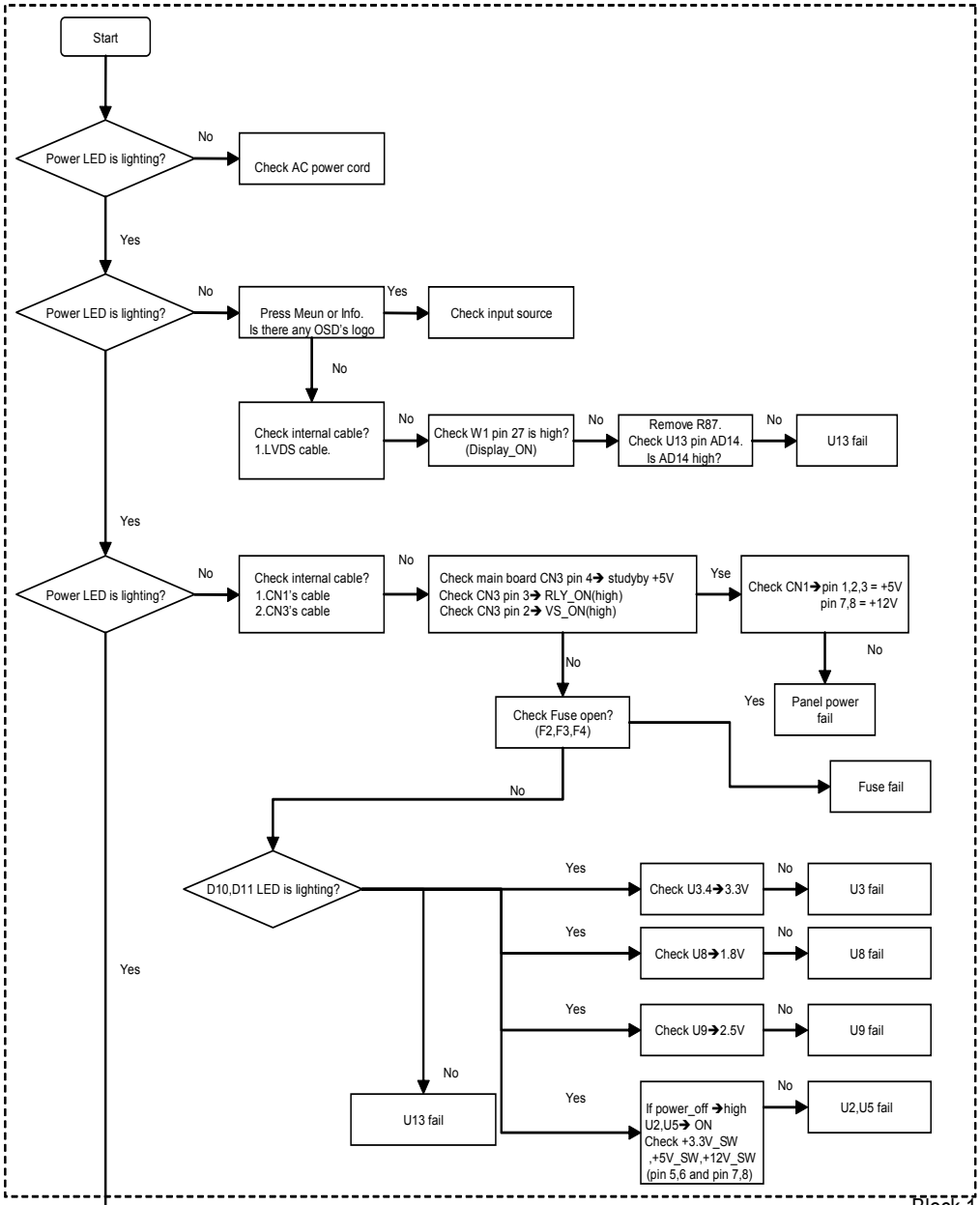


PDP DISPLAY NOTHING

1. Main board block diagram

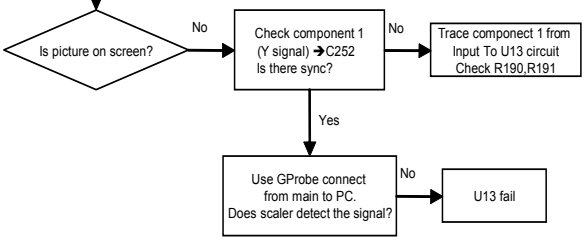


PDP DISPLAY NOTHING(Analog HD1/AC on/off default)



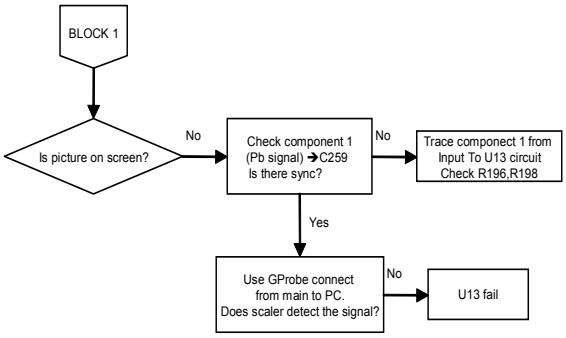
Block 1

PDP DISPLAY NOTHING(Analog HD1 without Y signal)

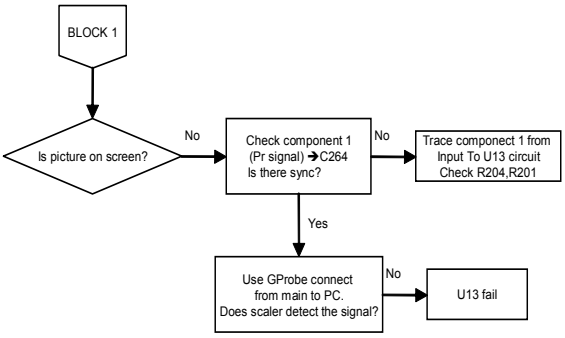


1

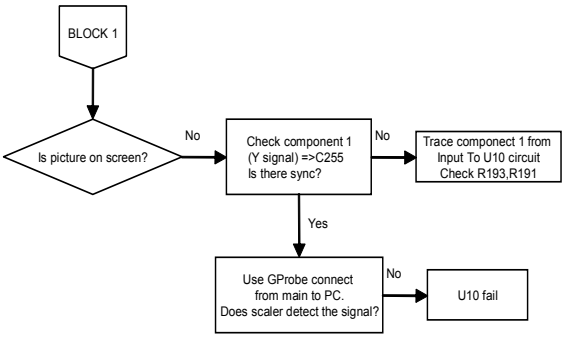
PDP DISPLAY NOTHING(Analog HD1 without Pb signal)



PDP DISPLAY NOTHING(Analog HD1 without Pr signal)

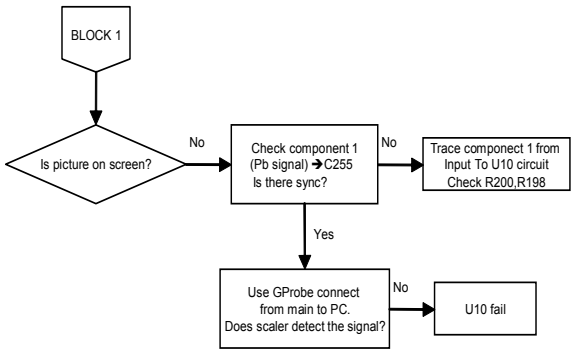


PDP DISPLAY NOTHING(Analog HD1 on PIP mode without Y signal)

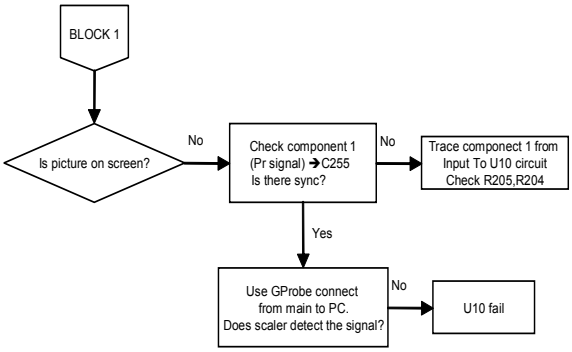


2

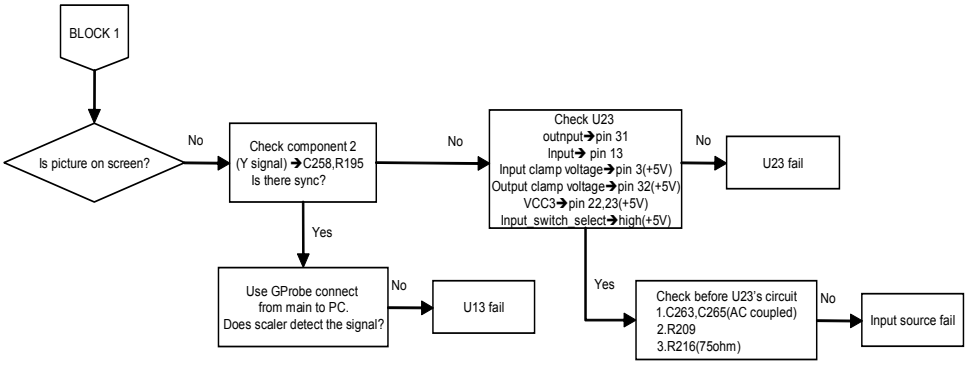
PDP DISPLAY NOTHING(Analog HD1 on PIP mode without Pb signal)



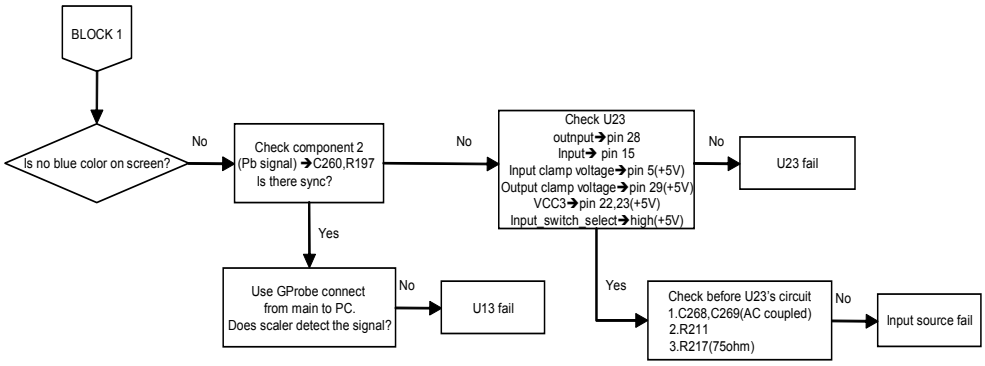
PDP DISPLAY NOTHING(Analog HD1 on PIP mode without Pr signal)



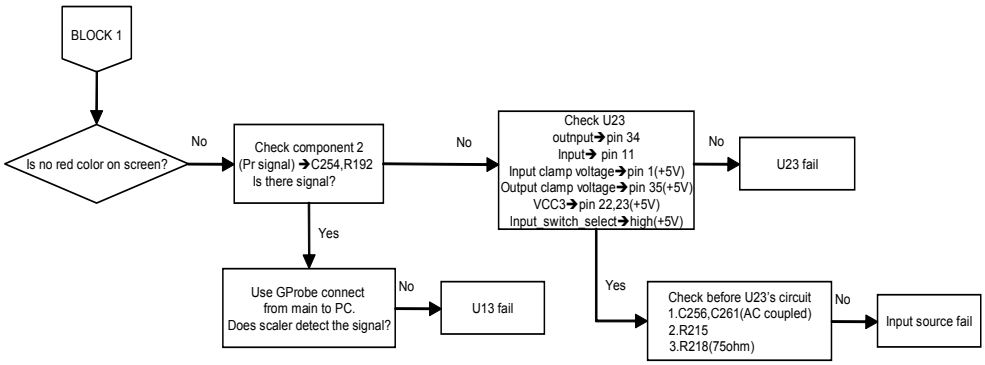
PDP DISPLAY NOTHING(Analog HD2 without Y signal)



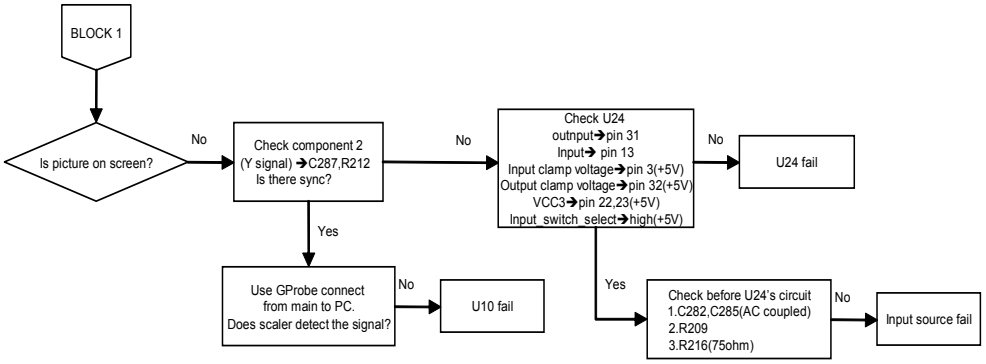
PDP DISPLAY NOTHING(Analog HD2 without Pb signal)



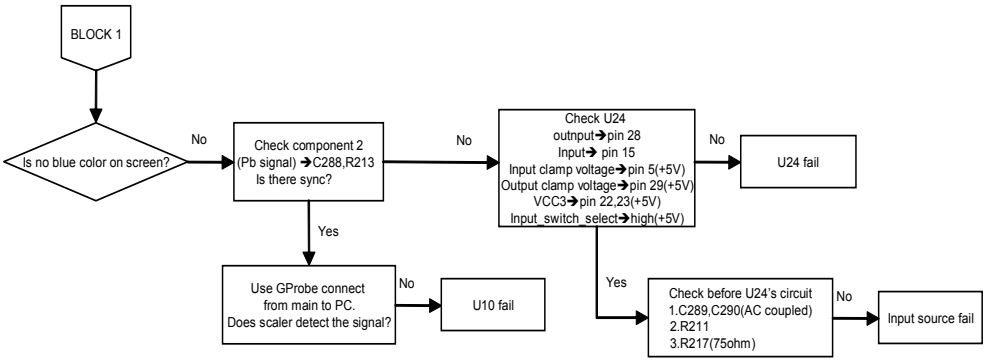
PDP DISPLAY NOTHING(Analog HD2 without Pr signal)



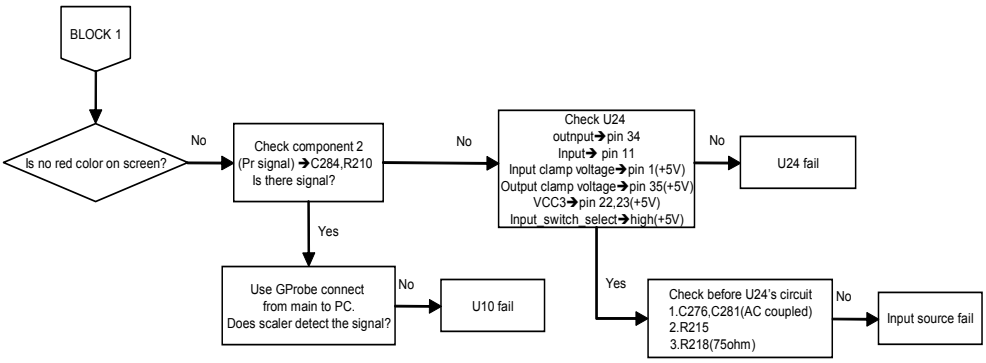
PDP DISPLAY NOTHING(Analog HD2 on PIP mode without Y signal)



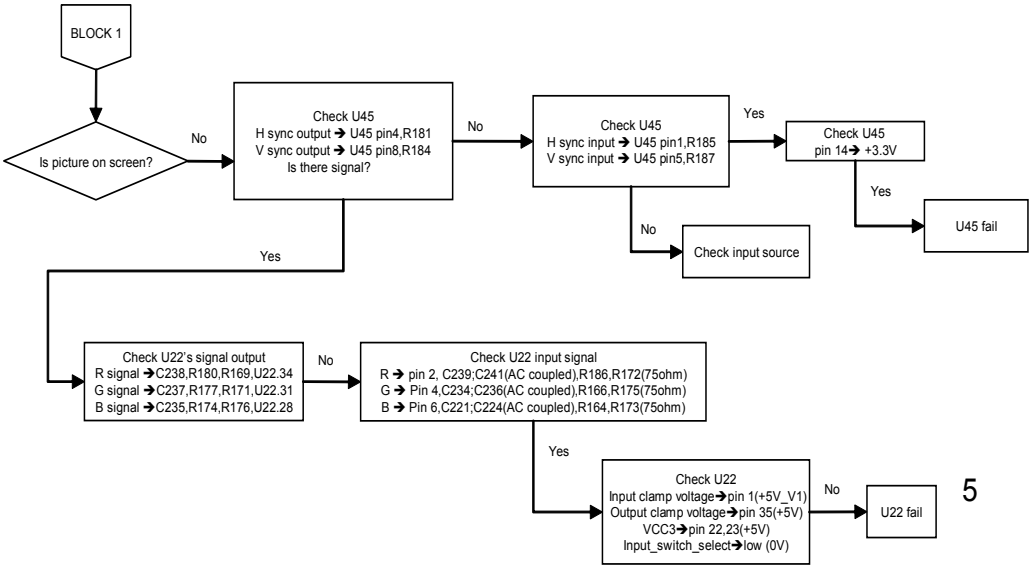
PDP DISPLAY NOTHING(Analog HD2 on PIP mode without Pb signal)



PDP DISPLAY NOTHING(Analog HD2 on PIP mode without Pr signal)

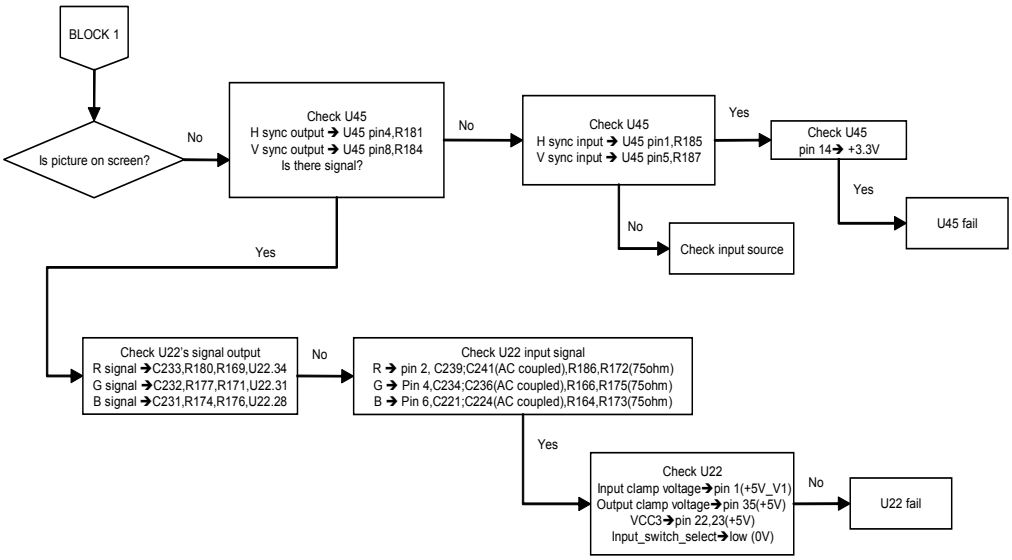


PDP DISPLAY NOTHING(RGB)

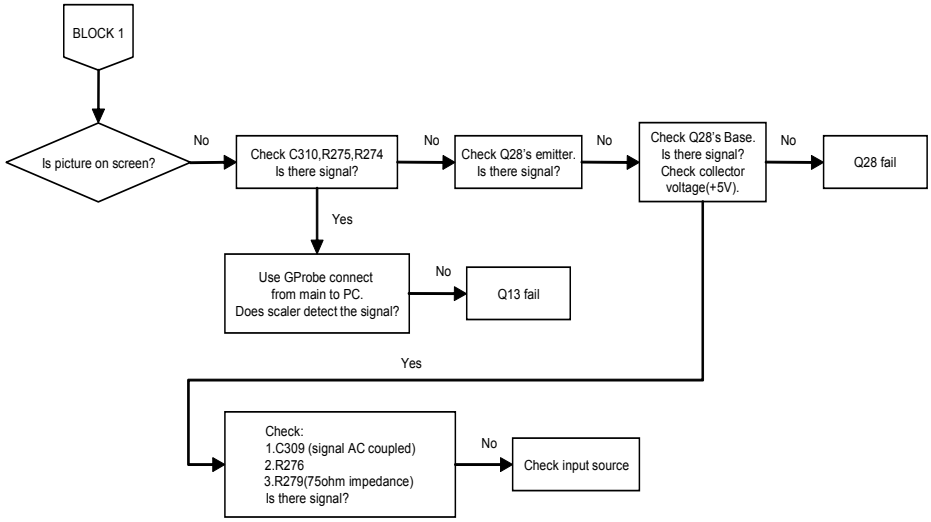


5

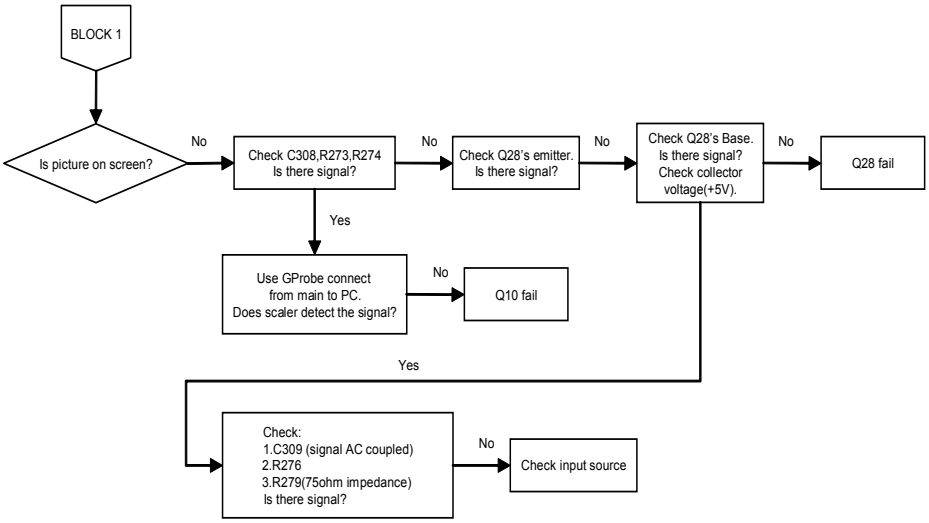
PDP DISPLAY NOTHING(RGB on PIP mode without screen)



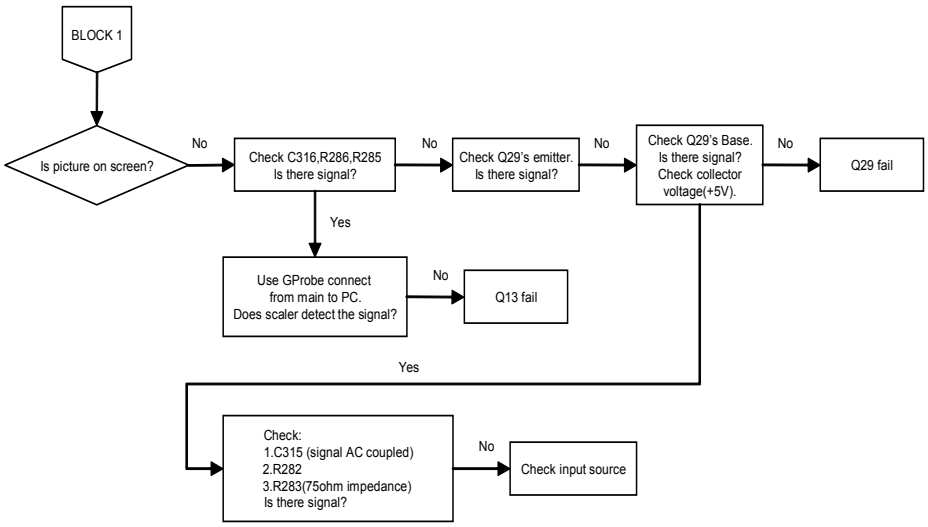
PDP DISPLAY NOTHING(Composite 1 without screen)



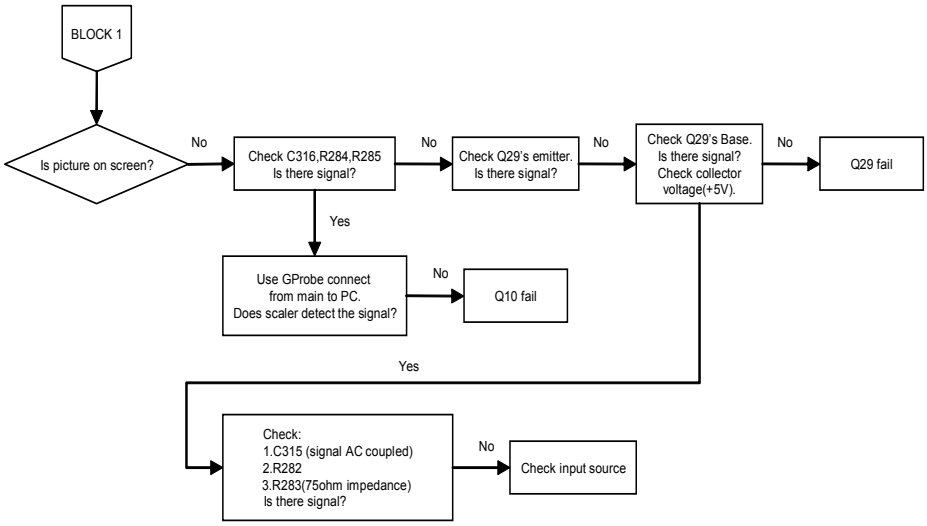
PDP DISPLAY NOTHING(Composite 1 on PIP without screen)



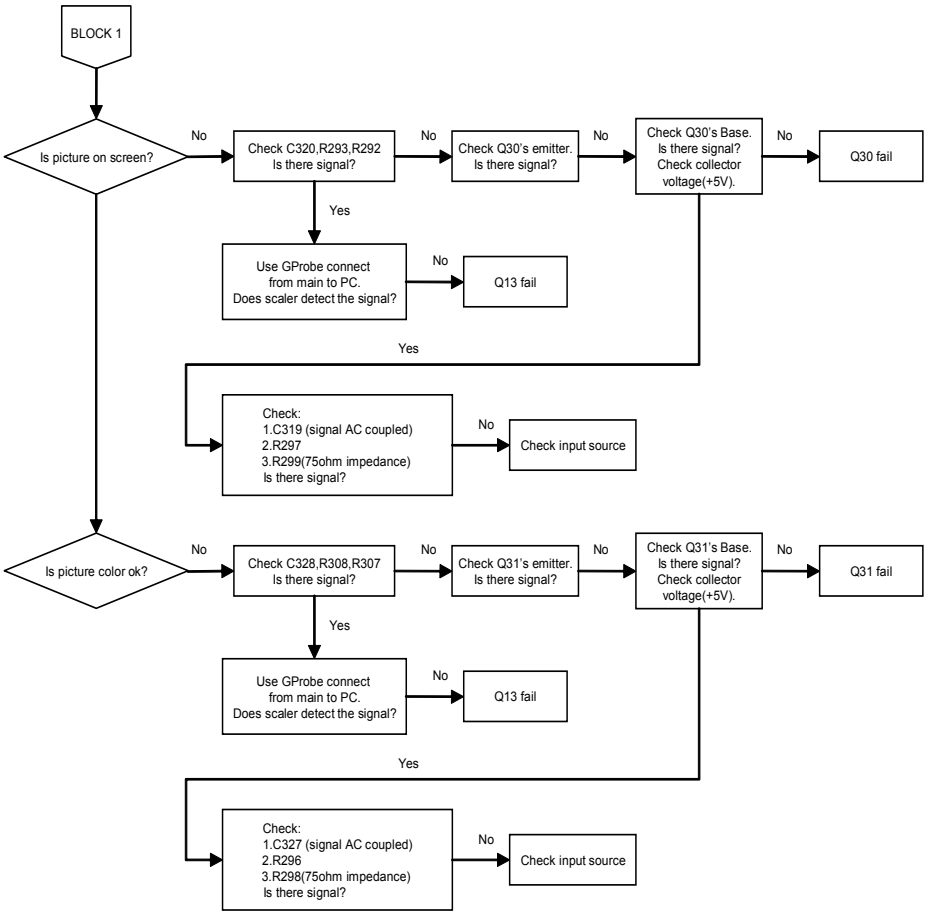
PDP DISPLAY NOTHING(Composite 2 without screen)



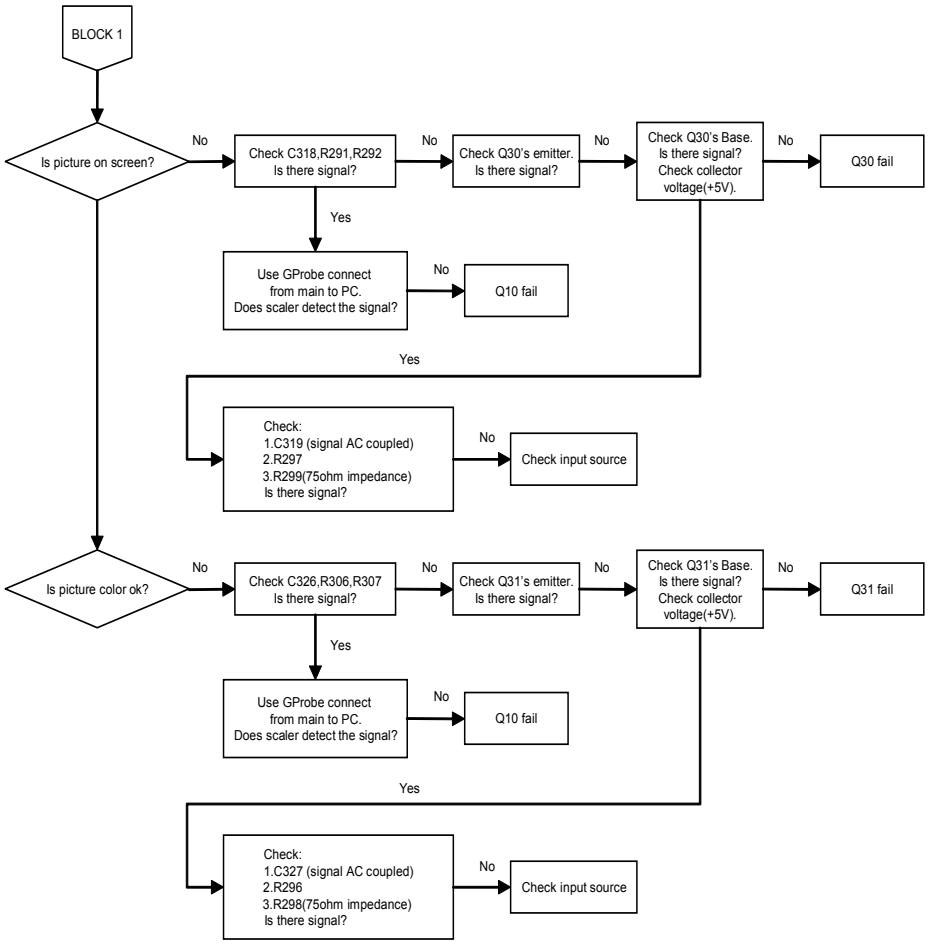
PDP DISPLAY NOTHING(Composite 2 on PIP without screen)



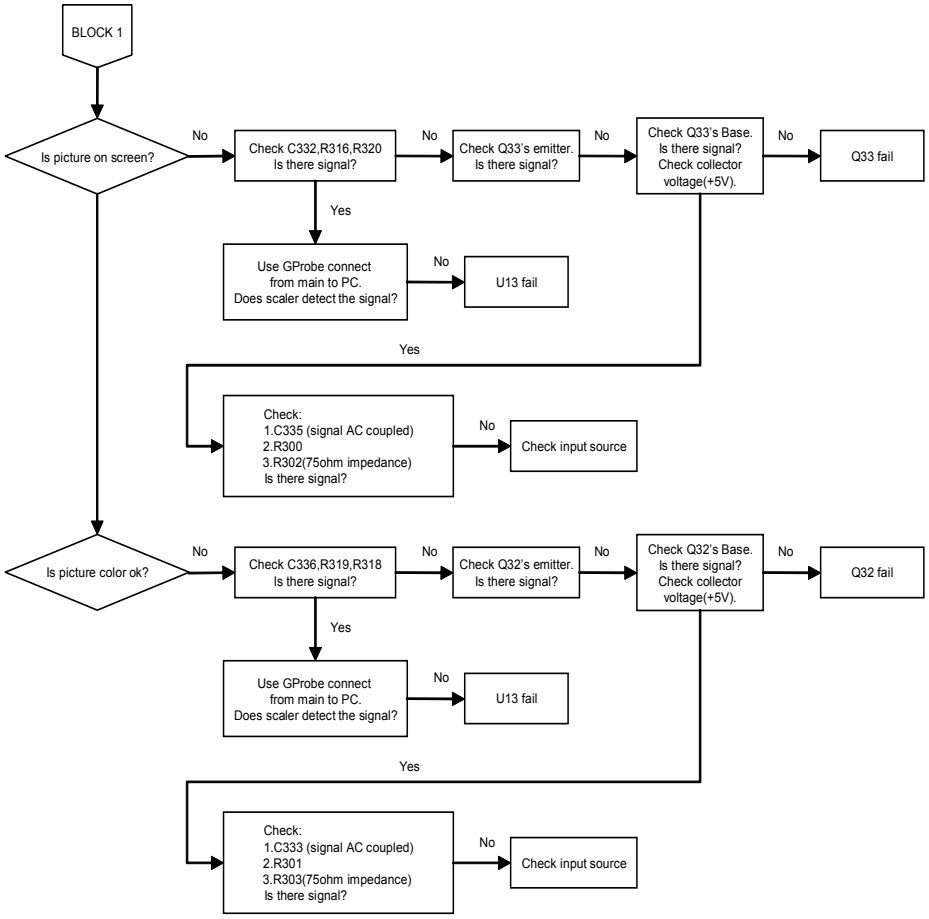
PDP DISPLAY NOTHING(S-VIDEO 1 without screen)



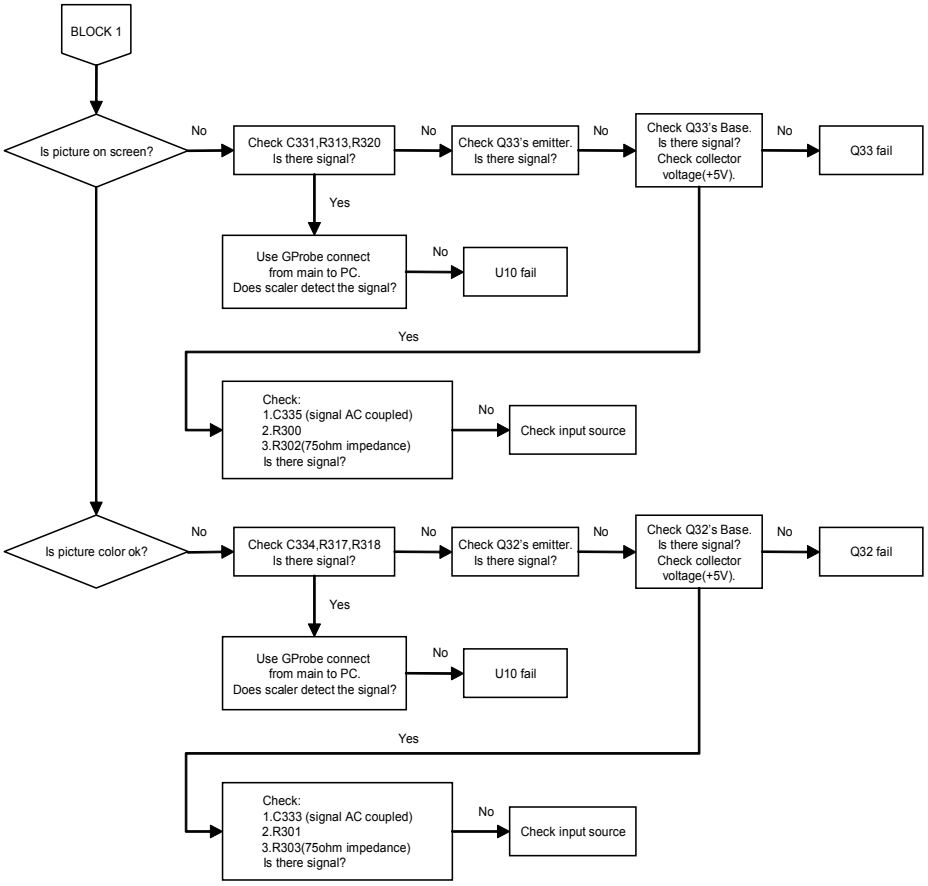
PDP DISPLAY NOTHING(S-VIDEO 1 on PIP mode without screen)



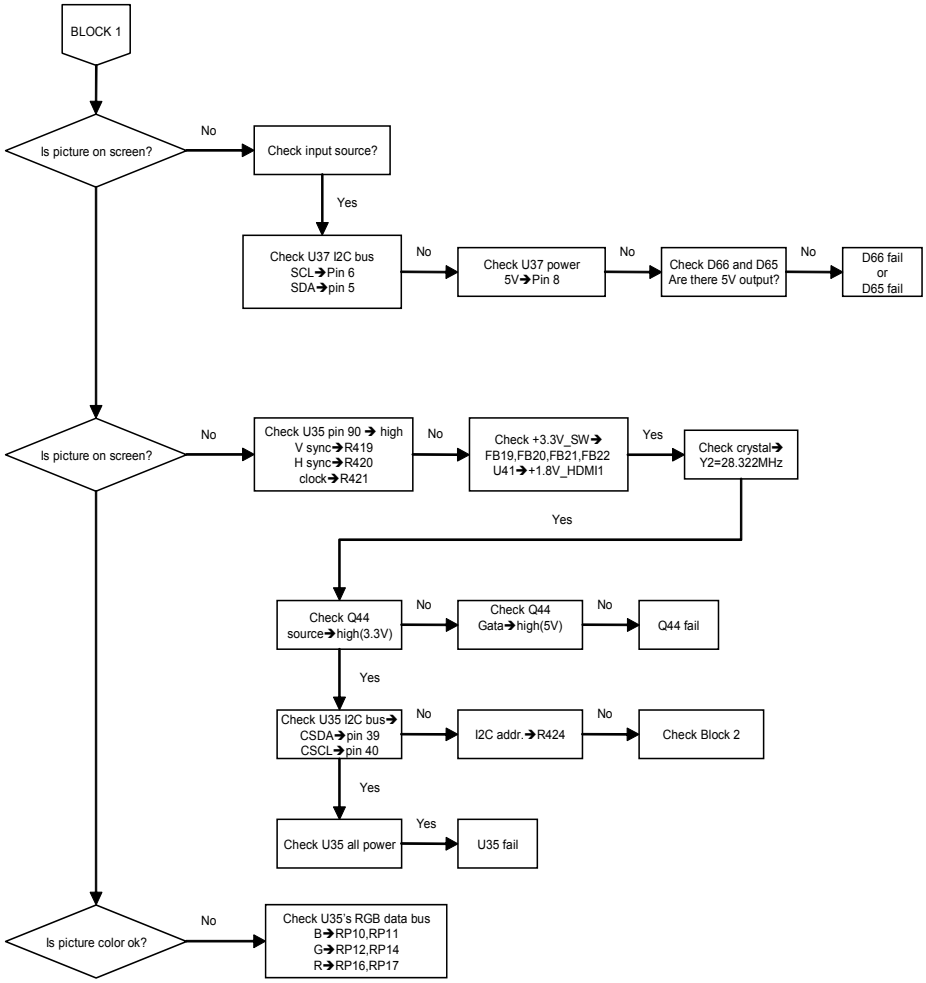
PDP DISPLAY NOTHING(S-VIDEO 2 without screen)



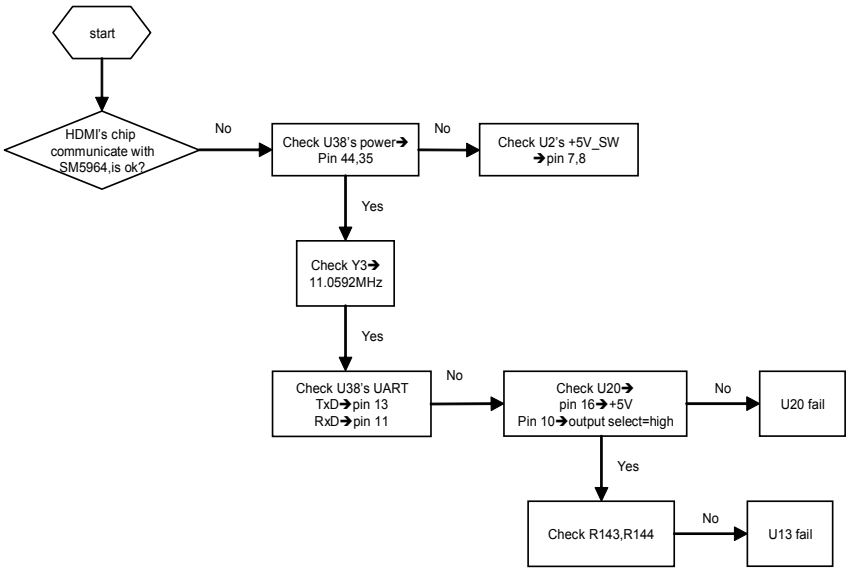
PDP DISPLAY NOTHING(S-VIDEO 2 on PIP mode without screen)



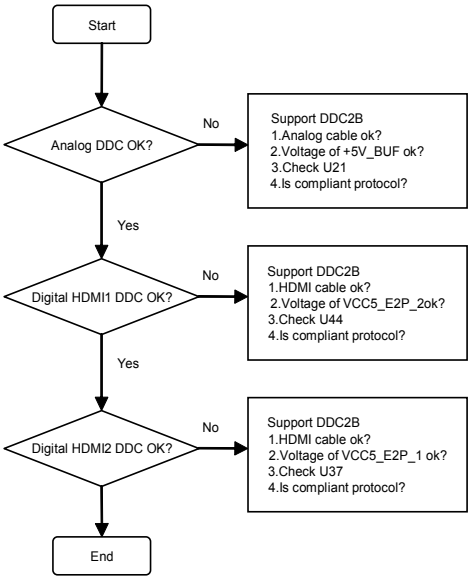
PDP DISPLAY NOTHING(Digital 2 U35 with PORT B without screen)



Block 2


start
HDMI's chip communicate with SM5964,is ok?
No
Check U38's power→ Pin 44,35
No
Check U2's +5V_SW →pin 7,8
Yes
Check Y3→ 11.0592MHz
Yes
Check U38's UART TxD→pin 13 RxD→pin 11
No
Check U20→ pin 16→+5V Pin 10→output select=high
No
U20 fail
Yes
Check R143,R144
No
U13 fail

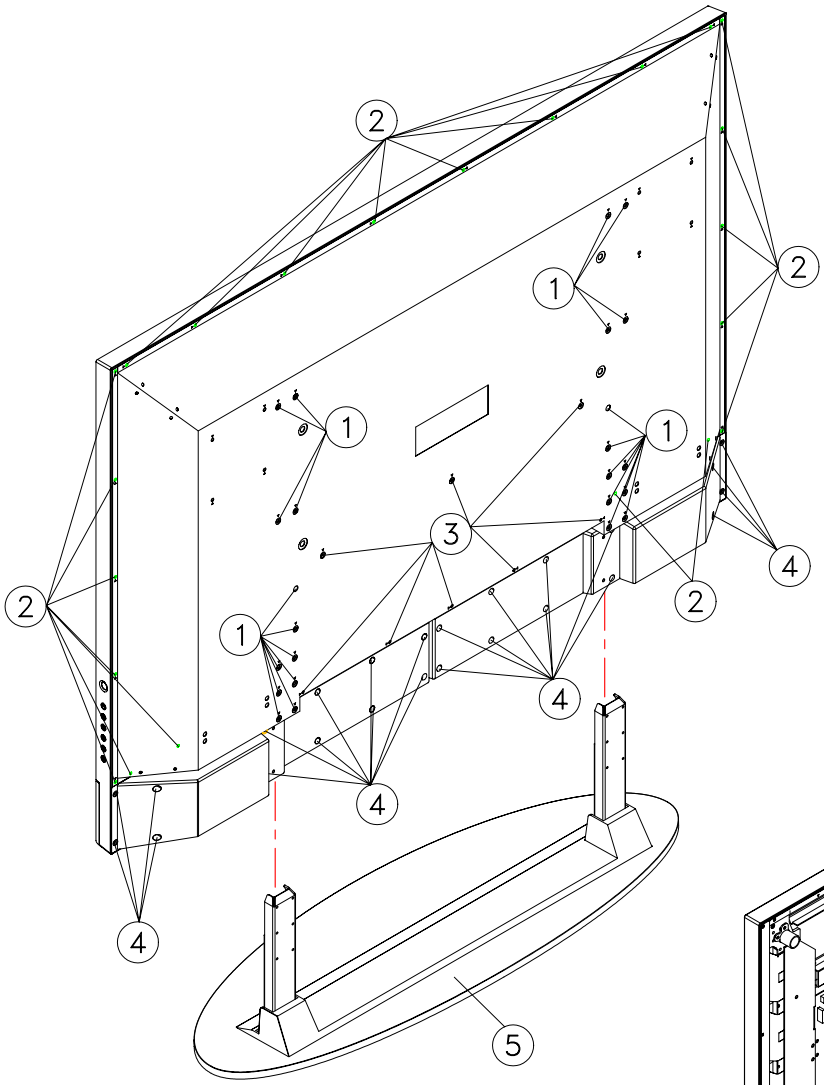
TROUBLE OF DDC READING

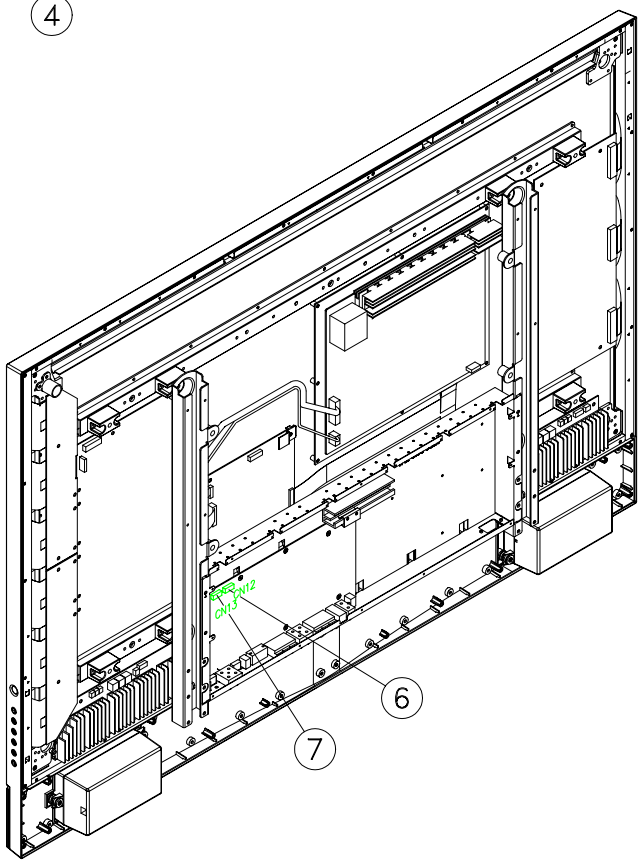


1.REAR COVER ASS'Y REMOVAL

Note:Spread a mat underneath to avoid damaging the Plasma surface.

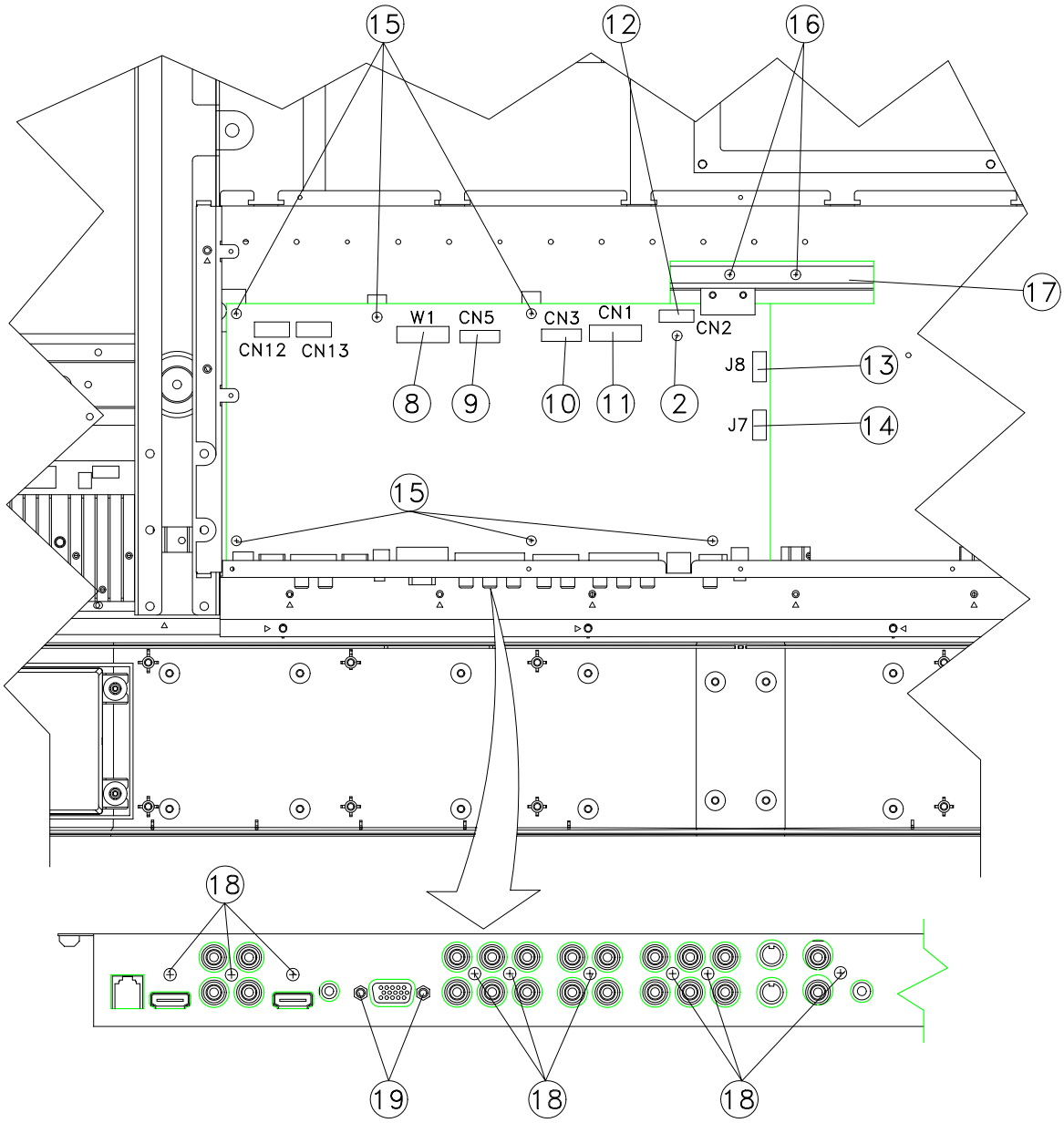
1) Remove twenty-four screws ① from rear cover.
2) Separate the Bass Ass'y ⑤ .
3) Remove twenty-two screws ② and eight screws ③ from rear cover.
4) Remove the connector ⑥ (CN12) ⑦ (CN13) of the Fan cable.
5) Separate the rear cover.
6) Remove twenty-four screws ④ from speaker rear cover right / left .
7) Separate the speaker rear cover right / left.





2. MAIN BD ASS'Y REMOVAL

1) Remove the connector ⑧(W1) of the Main bd cable1.
2) Remove the connector ⑨(CN5) of the keypad +IR cable.
3) Remove the connector ⑪(CN1) ⑩ (CN3) of the Main bd cable 2.
4) Remove the connector ⑫(CN2) of the Main bd cable 3.
5) Remove the connector ⑬(J8) ⑭(J7) of the speaker cable.
6) Remove the seven screws ⑮ from Main bd Ass'y.
7) Remove two screws ⑯ from heaksnik ⑰.
8) Remove nine screws ⑱ and two hexagon ⑲ from PCB support .
9) Separate the Main BD Ass'y.



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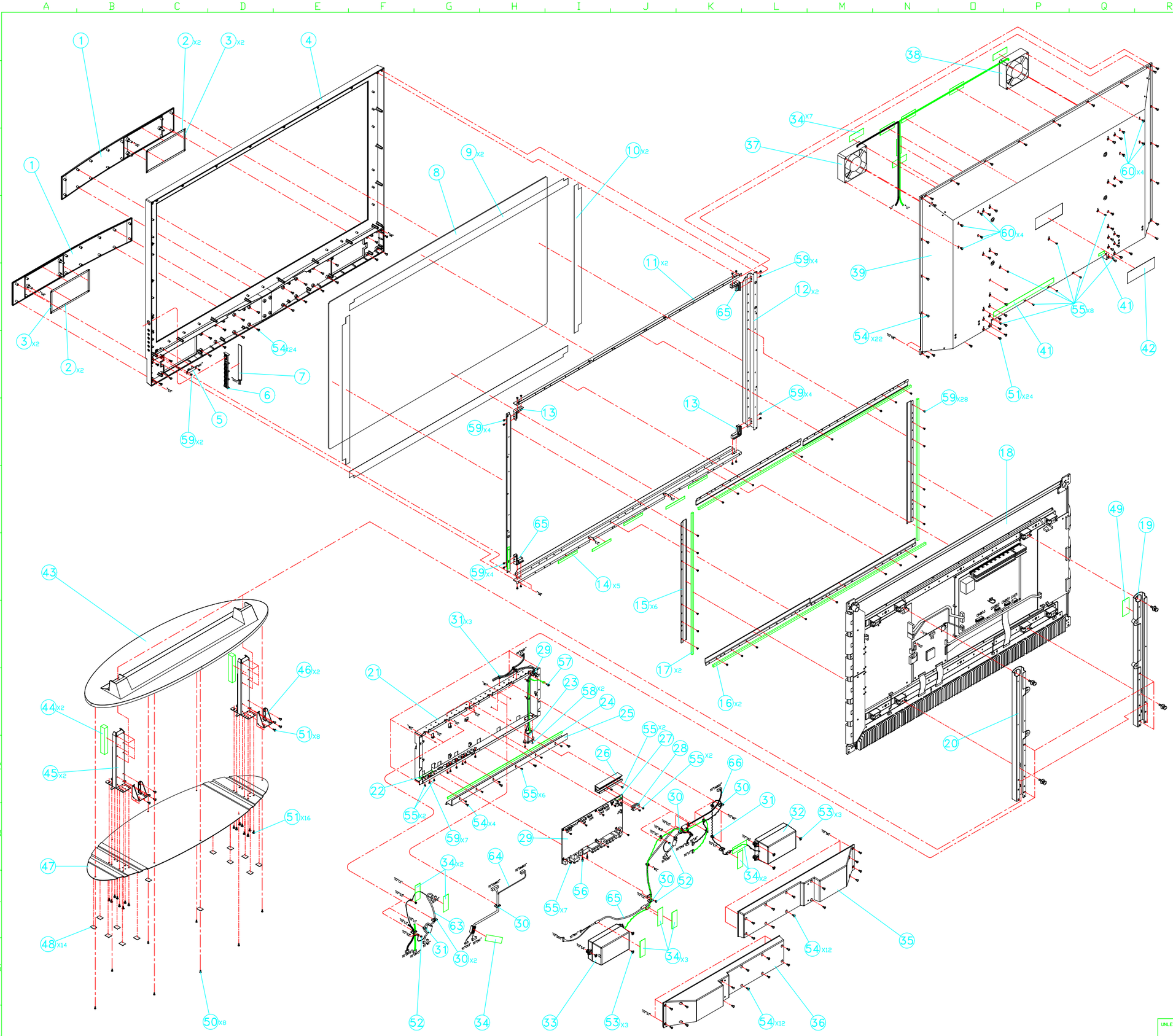

ITEM		DESCRIPTION	QTY
1		SPEAKER NET(PD-50L)	1
2		NON-WOVEN-FABRICS(200L*7W*0.5H)	4
3		NON-WOVEN-FABRICS(200L*7W*0.5H)	4
4		FRONT BEZEL VIZIO P50HDM(PMMA.BLACK)ASS'Y	1
5		PDP IR BD ASS'Y(PD-50L)	1
6		BUTTON(PD-50LM)(PMMA)	1
7		PDP DISPLAY BD ASS'Y(PD-50L)	1
8		PDP FILTER 50" 5X10(FG501PAA-01)(LG)	1
9		CONDUCTIVE FABRIC TAPE(40W*1162.6L)mm	2
10		CONDUCTIVE FABRIC TAPE(40W*678.6L)mm	2
11		FILTER BRACKET TOP(PD-50LM)	2
12		FILTER BRACKET RIGHT(PD-50LM)(SECC T+0.8mm)	2
13		BKT-SUPPORTOR-TR-BL(PD-50LM)(PC)	2
14		GASKET BLOCK(100L*10.W*1.0H)mm	6
15		FILTER CLIP(SPTE=0.3mm)(PD-50LM)	6
16		PANEL CUSHION-H(LENGTH=1130mm)(pd-50lm)	2
17		PANEL CUSHION-V(LENGTH=650mm)(PD-50LM)	2
18		PDP MODULE 50" PDP50X3(LG)	1
19		MAIN FRAME RIGHT(PD-50LM)()SECC T=0.8mm)	1
20		MAIN FRAME LEFT(PD-50LM)(SECC T=0.8mm)	1
21		PCB SUPPORT(PD-50LM)(SECC T=0.8mm)	1
22		GASKET BLOCK(9W*1H*70L)	1
23		POWER CORD 110V UL/CSA 1800mm BLK N. M.	1
24		GASKET BLOCK(610L*8W*2H)mm	1
25		I/O BRACKET (PD-50LM)(SECC T=0.8mm.black)	1
26		HEAK SINK(PD-42S)	1
27		HEATPATH(25X14mm)	1
28		HEAT SINK FIX MTEAL(TM-30A)	1
29		PDP MAIN BD ASS'Y(PD-50L)	1
30		EDGE ASDDLE DS-12(NYLON)	8
31		WIRE SADDLR(CH-01B)	16
32		SPEAKER 8ohm 10W BOX 1045mm CORE*1P302GR	1
33		SPEAKER 8ohm 10W BOX 840mm CORE*1P302GL	1
34		ACETATE CLOTH TAPE(27*75mm)	14
35		SPEAKER REAR COVER RIGHT(PD-50L)	1
36		SPEAKER REAR COVER LEFT(PD-50L)	1
37		FAN 12V1800 rpm 120*120 L=640mm 4P FD121225LB.	1
38		FAN 12V1800 rpm 120*120 L=1150mm FD121225LB	1
39		REAR COVER(PD-50LM)(SECC T=1mm,BLACK)	1
40		REAR PLATE VIZIO P50HDM	1
41		AC IN PLATE VIZIO (P50HDM)	1
42		BACK LBL VIZIO P50HDM	1
43		BASE COVER(PD-50LM)	1
44		GASKET BLOCK(17W*21H*120L)mm	2
45		BASE FRAME(PD-50LM)	2
46		CORNER-SUPPORT(PD-50LM)(SECC T=2mm)	2
47		BASE-PLATE(PD-50LM)(SECC T=2mm)	1
48		FOOT(PORON)(20L*15W*1H)	14
49		MYLAR 72*35*0.4mm	1
50		TAP.SCREW-TF #M3.0*8.0L,Ni	8
51		MAC.SCREW-MB M4.0*8.0L,BLK-Ni	–
52		MAC.SCREW-MBFW M3.0*5.0L.Ni	3
53		TAP.SCREW-TRF #3.0*8.0L,Ni	6
54		TAP.SCREW-TP#4.0*10.0L,BLK-Ni	–
55		MAC. SCREW-MB M3.0*6.0L,BLK-Ni	–
56		MAC.SCREW-MHSW #4-40*8.0L,Ni	2
57		MAC.SCREW-MPGW M4.0*8.0L,Ni	1
58		MAC.SCREW-MF M3.0*8.0L,BLK-Ni	2
59		TAP.SCREW-TB#3.0*6.0L,Ni	–
60		TAP.SCREW-TB #4.7*8L.BLK-Ni	8
61		WH FI-W31S/FI-W31S 20276 230mm CORE*2	1
62		WH PH5P+PH12P-EI7P+EI12P 1007#24 480/330mm	1
63		WH5102110-PH7P+PH4P995/883mm shield core*3	2
64		WH PH4P-EI4P 1007#24 380mm	1
65		BKT-SUPPORTOR-TL-BL(PD-50LM)(PC)	2

VIZIO P50HDM			2850-1233-6107
DESCRIPTION			PART NO.
AmTRAN TECHNOLOGY Co., LTD.		THIRD ANGLE PROJECTION	MODEL No.: VIZIO P50HDM
UNLESS OTHERWISE NOTED	DSN: JESSIE Yu 07/20/04	MATERIAL: ******	DWG. NAME: 50" CASE ASS'Y
.XX = ±0.10 .X = ±0.2 ANG. = ±1/2°	CHK:	QTY: 1 SIZE: A1	
		SCALE: Full UNIT: MM	DWG. No.: VIZIO-P50HDM-PLA50-AU-CA.DWG REV. 0 SHEET: 1 of 1